

SA EXAM PAPERS

YOUR LEADING PAST YEAR EXAM PAPER PORTAL

Visit SA Exam Papers

www.saexampapers.co.za



NATIONAL SENIOR CERTIFICATE

GRADE 12

SEPTEMBER 2020

AGRICULTURAL SCIENCES P2 MARKING GUIDELINE

MARKS: 150

This marking guideline consists of 9 pages.

SECTION A

QUESTION 1

1.1	1.1.1	C✓✓		
	1.1.2	A✓✓		
	1.1.3	C✓✓		
	1.1.4	B✓✓		
	1.1.5	D✓✓		
	1.1.6	A✓✓		
	1.1.7	B✓✓		
	1.1.8	C✓✓		
	1.1.9	B✓✓		
	1.1.10	D✓✓	(10 x 2)	(20)
1.2	1.2.1 1.2.2 1.2.3 1.2.4 1.2.5		(5 x 2)	(10)
1.3	1.3.1 1.3.2 1.3.3 1.3.4 1.3.5	Equilibrium point / Market equilibrium ✓✓ Entrepreneurs ✓✓ Strategic risk management ✓✓ Labour productivity ✓✓ Sex-linked trait ✓✓	(5 x 2)	
1.4	1.4.1 1.4.2 1.4.3 1.4.4 1.4.5	Demand ✓ Cash flow ✓ Allele ✓ Inbreeding depression ✓ Mutagen ✓	(5 x 1)	(5)

Copyright reserved

Please turn over

45

TOTAL SECTION A:

SECTION B

QUESTION 2: AGRICULTURAL MANAGEMENT AND MARKETING

2.1	2.1.1	Identification of price determining factor Supply✓	(1)
	2.1.2	 Explanation of how factors will cause a shift in the supply curve (a) Technology – Better technology can result in reduced production costs ✓ resulting in improved supply ✓ (b) Environmental conditions – Conducive environmental conditions will result in higher yields ✓ leading to increase in supply ✓ 	(4)
	2.1.3	Factors influencing supply • Price ✓ • Production costs ✓ • Subsidies ✓ • Seasonality ✓ • Competitive products ✓ • Legislation (Any 2)	(2)
2.2	2.2.1	Name of process Agri-business chain / Marketing chain ✓	(1)
	2.2.2	 Marketing channel shown by the arrow A – Farm gate marketing ✓ B - Fresh produce markets ✓ 	(2)
	2.2.3	Advantage of marketing channel A to the consumer Prices are lower than retail prices ✓	(1)
	2.2.4	Methods of dealing with factors hampering the marketing chain (a) Processing products close to where they are produced ✓ (b) Using cold storage / refrigerated transport / processing ✓	(1) (1)
	2.2.5	 Description of how the following affect the agri-business chain (a) Increases transportation costs ✓ (b) Seasonality of produce interrupts the market's demand for consistent supply ✓ and increases storage costs ✓ 	(1) (2)

Copyright reserved Please turn over

AGRICULTURAL SCIENCES P2

Copyright reserved Please turn over

(Any 2)

(2)

Access to better infrastructure ✓

	2.4.4	Name of document Business plan ✓	(1)
	2.4.5	Components of a business plan • Title page ✓ • Contents page ✓ / Summary of enterprise details ✓ • Executive summary ✓ • Overview of the industry ✓ • Overview of the business ✓ • Organisational structure and ownership ✓ • Human resources plan ✓ • Marketing plan ✓ • Financial plan ✓ • SWOT analysis ✓ (Any 2) (NB: All components of business plan accommodated) Not sure I understand what is meant here??	(2)
2.5	Aspect A. B. C.	ss of a SWOT analysis Opportunity ✓ Strength ✓ Threat ✓	(3) [35]
QUE	ESTION 3	3: PRODUCTION FACTORS	[၁၁]
3.1	3.1.1	 Meaning of the following economic characteristics of land (a) Industrial and residential areas reduce the amount of land available for agriculture ✓ (b) The amount of land available for agriculture in a country does not increase ✓ (c) The decrease in the marginal output of a production process ✓ as the amount of a single factor of production is incrementally increased, ✓ while the amount of all other factors of production remain constant 	(1) (1)
	3.1.2	 Methods of increasing the productivity of land Consolidation of uneconomic farming units ✓ Use of scientific farming methods ✓ Water management ✓ Use of farming methods that are suited to the area ✓ (Any 3) 	(3)
3.2	3.2.1	Deduction of type of farm workers A – Seasonal workers ✓ B – Permanent worker ✓	(2)
	3.2.2	 Motivation for answers to QUESTION 3.2.1 A – Harvesting is a seasonal activity ✓ B – Office / paper work is done by a farm manager who is a permanent employee ✓ 	(2)

Copyright reserved Please turn over

AGRICULTURAL SCIENCES P2

(EC/SEPTEMBER 2020)

(2)

6

Copyright reserved Please turn over

Production ✓

(EC/SEPTEMBER 2020)		AGRICULTURAL SCIENCES P2	7
3.5	3.5.1	 Management principles expressed in the passage Planning ✓ Implementation ✓ Control ✓ 	(3)
	3.5.2	 Management skills possessed by the manager Financial management skills ✓ Labour management skills ✓ Planning skills ✓ Organisation skills ✓ 	(2)
	3.5.3	 Motivation for answers to QUESTION 3.5.2 Financial management skills – The farmer drafted budgets ✓ Labour management skills - Decide which activities are going to be done by who ✓ Planning skills – Prepares production plans / drafts budgets ✓ Organisation skills – Decided which activities are going to be done by who, when and how ✓ 	(2) [35]
QUE	STION 4:	BASIC AGRICULTURAL GENETICS	
4.1	4.1.1	Mechanism of inheritance described in the passage Epistasis ✓	(1)
	4.1.2	Motivation of the answer in QUESTION 4.1.1 A separate gene controls the expression of the pigment production gene ✓	(1)
	4.1.3	Phenotypes of animals with the following phenotypes A – Albino ✓	

(2)

(2)

(1)

(Any 2)

B – Brown ✓

Phenotypic ratio 9:3:3:1

(b)

Genotypes of the ram's gametes

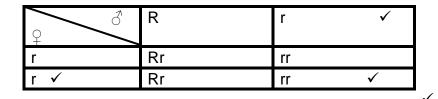
 AC ✓ Ac ✓ aC ✓

ac ✓

4.1.4

Copyright reserved Please turn over

4.2 4.2.1 Punnet square



Rubric

Punnet square with gametes and offspring genotypes ✓

Correct male gametes ✓ Correct female gametes ✓

Correct offspring genotype ✓

(4)

4.2.2 Phenotypic ratio

 $\frac{2}{4} \times 100 \text{ black} : \frac{2}{4} \times 100 \text{ white } \checkmark = 50\% \text{ black} : 50\% \text{ white } \checkmark$ (2)

4.3 4.3.1 Advantage of indigenous over exotic breeds

More resistant to ticks and diseases such as heartwater ✓ (1)

4.3.2 Identification of breeding method

Cross breeding ✓ (1)

4.3.3 Name given to products of breeding method used in the passage

Hybrids ✓ (1)

4.3.4 Disadvantages of breeding system described in the passage

- Hybrids vary greatly and can be disappointing ✓
- Can lead to calving problems ✓
- Requires knowledge and experience
 √ (Any 2) (2)

4.4 4.4.1 Meaning of the acronym EBV

Estimated Breeding Value ✓ (1)

4.4.2 Implication of EBV figure for weaning weight

The animal in question will produce offspring ✓ with a weaning weight of 10 kg above the flock average ✓ (2)

4.4.3 Conclusion that can be drawn from a heritability of 85%

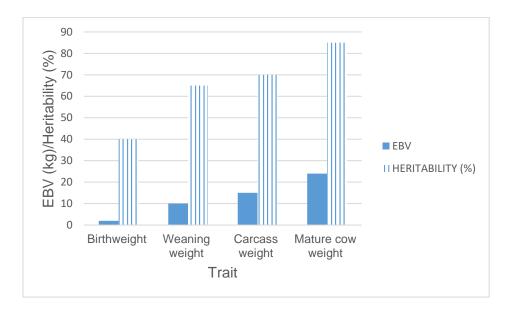
The characteristic is influenced more by genes ✓ than the environment ✓ (2)

4.4.4 Type of variation shown by the traits in the table

Continuous ✓ (1)

4.4.5 Bar graph showing the relationship between EBV and heritability

Copyright reserved Please turn over



Checklist

- Correct heading ✓
- X axis correctly calibrated with label (Trait) ✓
- Y axis correctly calibrated with label (EBV/Heritability) ✓
- Graph type (Bar graph) ✓
- Correct units (kg and %) ✓
- Accuracy ✓ (6)

4.5 4.5.1 **Deduction of an environmental benefit from the passage**Reduces the risk associated with overuse of fertilisers and pesticides ✓ (1)

4.5.2 Explanation of how genetic engineering reduces pollution from fertilisers and pesticides

 With genetic modification crops can be made to be pest resistance ✓ reducing the need for pesticides ✓

OR

 With genetic modification nutrient use efficiency in crops can be improved ✓ resulting in less need for fertilisers, therefore less pollution from fertilisers ✓

4.5.3 Social risks associated with the use of genetically modified seeds

- Poor developing countries will become dependent on developed countries for seed ✓
- Farmers cannot retain seeds resulting in high seed costs✓
- Some people think it's ethically unacceptable to produce GM crops ✓ (Any 2) (2)
 [35]

TOTAL SECTION B: 105 GRAND TOTAL: 150